

REMARKS

Restriction Requirement

Applicant respectfully disagrees with the Examiner's holding that Applicant did not specifically point out supposed errors in the restriction requirement, resulting in the Examiner withdrawing claims 1-7 from consideration of the claims pending in the application and treating the election as being without traverse. Applicant notes that on page 3 of Applicant's response in the provisional election of claims mailed July 19, 2001, that the restriction requirement was traversed; and further at lines 5-6 of the first paragraph of page 3, Applicant submits that both claims 1 and 8 require an electrically conductive fiber mesh net insert molded into the wall of the device. Applicant further indicated that the method for EMI shielding by insert molding and electrically conductive fiber mesh net into the wall of an electronic device cannot, as the Examiner submits, "be used any of chemical or etching instead of insert molding and electrically conductive fiber mesh net." The method, i.e., "insert molding an electrically conductive fiber mesh net into a wall of the device," and the apparatus, "EMI shielding apparatus for a portable electronic device characterized by an electrically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of said electronic device," define one invention and therefore are properly grouped for examination purposes, and all the claims relate to the same invention. Therefore, Applicant respectfully submits that the error of the restriction requirement meets the burden for distinctly and specifically pointing out the supposed error in the restriction requirement. Applicant therefore believes that reconsideration and withdrawal of the restriction requirement and examination of all the claims is in order.

Allowable Subject Matter

Applicant notes the Examiner's holding that claims 14 and 17 contain allowable subject matter, but are objected to as depending from a rejected base claim. To overcome this objection, Applicant has above rewritten claim 14 and intervening dependencies to put it into independent form as new claim 18. As so rewritten, claim 18 contains all the limitations originally appearing

in original claim 14 and its parent claims. New claim 19 contains the limitations of original claim 17 and is made dependent upon claim 18. The allowance of claims 18 and 19 therefore appear to now be in order, and such allowance is requested.

Objection to Specification

The specification is objected to by the Examiner indicating that the term “raschel” should be capitalized as being a trademark and accompanied by generic terminology. Applicant certainly respects the rights of trademarks and trademark owners; however, to Applicant’s knowledge, the term “raschel” is not a trademark but refers to a method for warp knitting and possibly for equipment to carry out warp knitting by the raschel method. Applicant has provided at page 9, lines 19-21, that raschel is characterized by warp knitting with needle bars, latch needles and removal and holding cams as known by those skilled in the art of knitting. Applicant believes the use of the term “raschel” as noted in the application is proper; however, Applicant is more than willing and amenable to capitalizing the term wherever it is used upon verification that the term is a trademark.

Rejection Under 35 USC §112

Claim 12 is rejected under 35 USC §112, second paragraph, specifically lines 2-6, as being unclear. As a result, Applicant has amended claim 12 as set forth above to indicate that the textile structure mesh net includes all of warp knitted, woven, raschel, braided, non-woven and spun multidirectional fiber mesh nets. As so amended, it should be clear that the textile structure mesh net may be any one of all of the specified members of the fiber mesh nets specified. Applicant respectfully submits that claim 12 as amended overcomes the rejection under 35 USC §112 and respectfully requests withdrawal of the rejection.

The Examiner further rejects claim 15 under 35 USC §112 as being unclear as to the meaning of “and a specific weight of 10-50 grams per square meter.” Applicant submits that the meaning is clear and obvious to those skilled in the art, specifically, the weight means how much fiber there is per square meter. In this instance, the bobbinet woven three-directional fiber mesh

net is characterized with 3 to 34 openings per square inch and contains sufficient fiber to result in a weight of 10 to 50 grams per square meter. Said another way, a square meter of bobbinet woven three-directional fiber mesh net would weigh between 10 and 50 grams. Applicant respectfully submits that the meaning is clear to those skilled in the art and respectfully requests withdrawal of the rejection under 35 USC §112.

Rejection Under 35 USC §§102 and 103

Turning now to the rejection of claims 8, 9 and 16 under 35 USC §102(e) and claims 10-13 and 15 under 35 USC §103(a), Applicant has carefully studied the references and the reasoning advanced by the Examiner in rejecting these claims and respectfully traverses the Examiner's reasoning and assertions as set forth in the remarks below.

Applicant's invention relates to EMI shielding apparatus for a portable electronic device and in claim 8 specifies "an electrically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of the device." Applicant's invention overcomes the problems of the prior art by providing EMI shielding as an integral part of the cover forming the device. The EMI shield of the invention is an integral part of the housing enclosure or case of the electronic device because the electrically conductive fiber mesh net is insert molded into wall surfaces defining an interior cavity of the device.

The patent application specification at page 11, lines 8-18, recites a cover structure or housing shell 40 wherein fiber mesh net designated 42 is shown insert molded into a predefined interior cavity 44 formed by the wall 46 of the cover and internal walls 48, 50 of the inner side, or electronic circuitry facing side 52 of the cover 40. The interior cavity 44 is positioned in the cover to enclose the area ---- to be EMI shielded when the cover is placed on a receiving housing shell or base structure of the electronic device. The patent application specification at page 12, lines 18-20 and 33-34, specifies that the insert molded fiber mesh net 82 in the interior cavity 84 of the cover structure 80 as shown in Fig. 11 is shown in a cutaway view in Fig. 12 illustrating the co-action of the cover 80 with a receiving housing shell or base structure 90 of the electronic device. Clearly, Applicant's invention contemplates the EMI shielding to be an integral part of

the cover of the electronic device. Applicant's invention further specifies fiber mesh net textile structures for carrying out the insert molding into wall surfaces defining an interior cavity of the device.

As for claims 8 and 16, the Examiner alleges that *Yenni, Jr. et al.* (U.S. Patent No. 6,090,728) discloses an EMI shielding apparatus as shown in Figures 1 and 2 for a portable electronic device characterized in an electrically conductive fiber mesh net, insert molded into wall surfaces defining an interior cavity of the electronic device, and wherein the cavity has a size and shape and contour to surround electronic circuitry within the electronic device.

As to claim 9, the Examiner asserts that *Yenni* discloses EMI shielding apparatus having at least a portion of the insert molded electrically conductive fiber mesh net in a substantially continuous physical and electrical contact with a ground plane carried on a circuit board within the electronic device.

Applicant respectfully traverses the Examiner's reasoning and submits that it is clear and obvious from viewing the figures of *Yenni* that *Yenni* teaches a totally different structure from the invention. *Yenni* describes and discloses an EMI shielding cover 12 that surrounds electronic components on a printed circuit 18, wherein a heat-staking tool 14 heats the contact edge 20 of the EMI shield cover 12 to bond the EMI shield to the printed circuit board 18 along the conductive strip 16. The *Yenni* assembly must now be placed within a housing enclosure or case of the electronic device with which it is used. *Yenni* is representative of the prior art and suffers from the disadvantages which the present invention overcomes. The *Yenni* approach contemplates and teaches an EMI shield which is placed over a printed circuit board to shield the electronic components. The thus-assembled combination must now be placed within a housing or enclosure. In contrast, the EMI shield of the invention is an integral part of the housing enclosure or case of the electronic device because the electrically conductive fiber mesh net is insert molded into wall surfaces defining an interior cavity of the device.

Claims 10, 11 and 15 stand rejected as being unpatentable over *Yenni* in view of *Lamp et al.* (U.S. Patent No. 3,580,981). The Examiner asserts that *Yenni* discloses all of the limitations of the claimed invention except for the fiber mesh net being a bobbinet woven three-directional

mesh net. The Examiner alleges *Lamp* shows an EMI shielding gasket as shown in Figures 1-4 having a fiber mesh net made by bobbinet woven in three directions. *Lamp* discloses a honeycombed electrically conductive ventilating panel having a shielding gasket between the honeycomb and the frame of the cabinet holding the electronic equipment. The Examiner alleges it would have been obvious to make the fiber mesh net by bobbinet woven in three directions as taught by *Spies* (cited in the Information Disclosure Statement). The gasket of *Lamp* is not sufficient to provide EMI shielding and only provides protection for leakage between the two components.

Lamp does not contemplate or show molding and uses a method similar to gluing. *Lamp* does not have a net of any type but a honeycomb structure, which is totally different than the structure of the present invention.

The Examiner combines the *Yenni* reference with *Bruner et al.* (U.S. Patent No. 5,795,835) to reject claim 12 indicating *Bruner* teaches a warped knit textile mesh, and alleges that it would be obvious to modify the EMI shielding of *Yenni* to provide the warped knit textile mesh as taught by *Bruner*.

The *Bruner* reference discloses a knitted textile for use as a structural load bearing element in demanding earthwork construction applications. The *Bruner* structure is a plastic fiber which is a mechanically strong object and cannot be placed in a mold for insert molding to become an integral part of the cover of an electronic device.

The Examiner combines *Yenni* with *Yoshikawa et al.* (U.S. Patent No. 6,150,754) to reject claim 13 asserting that *Yoshikawa* teaches the fiber mesh net laminated to the polymer film sheet, and alleges that it would have been obvious to one skilled in the art to provide the fiber mesh net laminated to the polymer film sheet as taught by *Bruner*.

The *Yoshikawa* reference deals with a layer structure that is glued or laminated together and not molded and further deals with a transparent mesh member interposed between two transparent plates and bonded by adhesives. There is no suggestion or disclosure that *Bruner* can be insert molded, much less that *Bruner* can provide EMI shielding apparatus characterized by

an electronically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of the device.

Applicant respectfully submits that *Yenni* does not anticipate either singly or in combination with any of the other cited references EMI shielding as shown and claimed in the present invention because *Yenni* fails to teach, disclose or suggest “an electrically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of the device.”

Moreover, *Yenni* teaches away from using a mesh net for EMI shielding and states at column 6, lines 59-64, “EMI shielding articles, for use as shielding covers herein comprises a carrier sheet, usually a thermoplastic polymer sheet, a conductive EMI shielding layer in the form of an electrically conductive, randomly oriented fibrous metal mat and a polymer fiber-coat substantially surrounding the fibers of the metal mat.” A mesh of any type is not contemplated.

Further, at column 7, lines 60-64, a first preferred embodiment is a thermoformable EMI shielding sheet comprising a carrier sheet of polycarbonate supporting a metal fiber mat of low melting alloy fibers.

At column 8, lines 1-4, *Yenni* describes an alternate preferred embodiment comprising a carrier sheet attached to a metal fiber mat by a layer of thermoplastic fiber coat material.

At column 8, lines 7-17, *Yenni* describes a third preferred embodiment of four layers comprising a carrier sheet, a first adhesive layer, a metal fiber mat and a second adhesive layer. A further modification includes electrically conductive particles in the adhesive to facilitate electrically conductive pathways. *Yenni* uses metal fiber pieces that are pressed in a carpet-like fashion and the fiber is mixed and held with adhesive. There is no need for an adhesive in the invention because the mesh net is a continuous fiber that is conductive.

Yenni does not contemplate using a woven mesh of any type for EMI shielding and in fact teaches away from a woven mesh or any mesh whatsoever. Specifically, at column 1, lines 53-65, *Yenni* goes through great detail to explain why a discontinuous grid such as a metal mesh is susceptible to increases in maximum void dimension in any enclosure formation process, sometimes called the “slot effect,” and could cause faulty EMI shielding performance. *Yenni* goes on to say that void size increases due to stretching, damage from tearing or other processes

that can break grid structures and likewise are not suitable for EMI shielding. Accordingly, one skilled in the art would not look to *Yenni* to provide a mesh net EMI shielding as contemplated by the present invention.

Yenni's EMI shield is not integrated with the wall of the electronic device and is in fact as described above and in *Yenni*, a discrete article.

Accordingly, one skilled in the art would not look to *Yenni* or be motivated by *Yenni* to make the modification as suggested by the Examiner or to make the combinations as suggested by the Examiner to arrive at Applicant's invention.

The Examiner has failed to set forth a *prima facie* case to establish why one of ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art or by implications contained in such teachings or suggestions. Just because the prior art can be modified in the way suggested by the Examiner does not make the modification obvious unless the desirability of the modification is suggested by the prior art.

Applicant further submits that the Examiner has attempted to establish obviousness by using hindsight in view of the teachings or suggestions of the application. As set forth above, there is no specific finding or a suggestion to combine the references as suggested by the Examiner, particularly in view of the lack of teaching by *Yenni* to use a mesh net for EMI shielding.

Applicant respectfully submits that claim 8 is patentably distinguishable over the *Yenni* reference by specifying "an electrically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of the device. The remaining claims are dependent directly or indirectly upon independent claim 8, and it is submitted that they too distinguish over the references for similar reasons and further for limitations clearly set forth therein.

The remaining references cited by the Examiner are made of record but are not relied upon in the rejection.

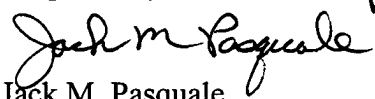
CONCLUSION

In view of the foregoing, it is believed that all of the claims of this application are now in condition for allowance, and such action at an early date is earnestly solicited. In the event the Examiner fails to find this application to be in condition for allowance, it is requested that he contact Applicant's attorney so that an interview can be arranged to discuss the matter further.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please AMEND CLAIM 12 and ADD NEW CLAIMS 18 and 19 as follows:

12. (Amended) EMI shielding apparatus as set forth in claim 8 further characterized in that said fiber mesh net comprises a textile structure mesh net including [at least] all of warp knitted, woven, Raschel, braided, nonwoven and spun multidirectional fiber mesh nets.

18. (New) EMI shielding apparatus for a portable electronic device characterized by an electrically conductive fiber mesh net insert molded into wall surfaces defining an interior cavity of said electronic device, said cavity having a size, shape and contour to surround first electronic circuitry within said electronic device, said fiber mesh net further being laminated to a polymer film sheet, and further characterized in that said polymer film sheet has an electrically non-conductive surface opposite said fiber mesh net surface for carrying second electronic circuitry, and said fiber mesh net having at least a portion electrically coupled to said second electronic circuitry and to first electronic circuitry within said electrical device for passing electronic signals between said first and second electronic circuitry.

19. (New) EMI shielding apparatus as set forth in claim 18 further characterized in that said fiber mesh net is inserted molded into a cover portion of said electrical device such that said second electronic circuitry is electronically coupled to other electronic circuitry carried on the exterior of said cover and arranged for functional co-action with said second electrical circuitry to pass electrical signals between said other and said second circuitry.